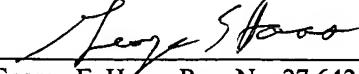


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I hereby certify that this correspondence is being deposited with the United States Postal Service on the date set forth below as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



Date of Deposit October 27, 2005


George E. Haas, Reg. No. 27,642

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Before the Board of Patent Appeals and Interferences

Applicants: Jonathan R. Chittenden

Art Unit: 3747

Serial No. 10/774,237

Examiner: Gimie

Filed: February 6, 2004

For: A Mechanism for Removably Coupling a Shaft of a
Utilitarian Device to an Internal Combustion Engine

SUBMISSION OF APPELLANTS BRIEF ON APPEAL

Mail Stop AF
Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Appellants hereby submits his brief in the appeal of the final rejection of the subject patent application.

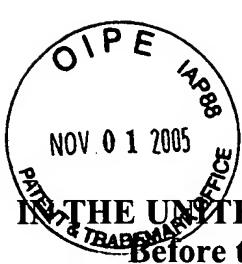
The \$250.00 fee for filing a brief by a small entity and any other fees due should be charged to Deposit Account No. 17-0055.

Respectfully submitted,
Jonathan R. Chittenden

By: 
George E. Haas
Registration No. 27,642

Dated: October 27, 2005

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
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For: A Mechanism for Removably Coupling a Shaft of a
Utilitarian Device to an Internal Combustion Engine

APPELLANT'S BRIEF ON APPEAL

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Appellant, Jonathan R. Chittenden, having filed a timely Notice of Appeal in the above-identified patent application, hereby submits this brief.

I. REAL PARTY IN INTEREST

The present application is assigned to the Kohler Company of Kohler, Wisconsin.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

This appeal is taken with respect to claims 1-19 which are pending and stand finally rejected in the subject patent application. Claims 1-19 are set forth in Appendix A hereto.

IV. STATUS OF AMENDMENTS

No amendments were offered after the final Office Action.

V. SUMMARY OF THE INVENTION

The present invention relates to a mechanism by which a utilitarian device, such as an electric generator or pump, can be removably attached to an internal combustion engine having a vertical shaft. That removability enables various devices to be powered by the engine at different times. For example, as shown in Figure 1, an electric generator is connected on top of the engine for a standard lawn mower. A key concept is that the weight of the utilitarian device is supported through the crankshaft of the engine, as opposed to being supported directly by the engine housing or another structural component.

With reference to Figures 1 and 5 of the pending application, independent claim 1 specifies a powered apparatus (10) that has an internal combustion engine (14) with a housing (20) and a vertical crankshaft (66). A utilitarian device (16) has a body (40) and a drive connector (78) that is removably coupled to the engine crankshaft (66) so that the utilitarian device receives rotational force from the engine. A support bearing (79), that is separate from the drive connector (78) for powering the utilitarian device, is fixedly connected to either the utilitarian device body (40) or the vertical engine crankshaft (66) and releasably engages the other one of those components. This attachment is such that the weight of the utilitarian device (16) is transferred through the support bearing (79) to the internal combustion engine. Note the gap between the utilitarian device body and the engine in Figure 5. Therefore, the weight of the utilitarian device is not transferred directly to the engine housing (20) or other components of the powered apparatus.

Claim 4, depending from claim 1, specifies that engine coupling (71) is attached to the crankshaft (66) and engages the support bearing (79) and also has an aperture (72) into which the drive connector (78) of the utilitarian device (16) is received.

Dependent claim 5 recites that a flywheel (68) is attached to the engine crankshaft (66) and has the engine coupling (71) mounted thereon. The support bearing (79) and the drive connector (78) are removably coupled to the flywheel.

Claim 6 states that the internal combustion engine (14) further comprises an engine coupling (71) which is attached to the crankshaft (66) and which has an aperture (72). The drive connector (78) of the utilitarian device (16) comprises a shaft (73) that is received in that aperture.

Referring still to Figures 1 and 5, independent claim 9 specifies an internal combustion engine (14) with a vertical crankshaft (66) to which an engine coupling (71) is connected, wherein the coupling has an aperture (72). A utilitarian device (16) has a body (40) with a drive shaft (73) that is removably received within the aperture of the engine coupling (71). A separate support bearing (79) is secured to either the utilitarian device body (40) or to the engine coupling (71). The support bearing removably engages the other of the utilitarian device body and the engine coupling. That engagement is such that the weight of the utilitarian device (16) is transferred through the support bearing (79) to the internal combustion engine (14). Here too, the weight of the utilitarian device (16) is transferred directly through the engine coupling (71) to the vertical crankshaft (66), as opposed to be transferred directly between other components of the engine and the utilitarian device (16) or of the powered apparatus.

Claim 10, depending from claim 9, specifies a flywheel (68) that connects the vertical crankshaft (66) to the engine coupling (71).

Dependent claim 12 states that the support bearing (79) is secured to the body (40) of the utilitarian device (16) and removably engages the engine coupling (71) that is attached to its vertical crankshaft (66).

Independent claim 15 specifies a utilitarian device (16) for connection to an internal combustion engine (14). That utilitarian device has a body (40) and a drive member (78) for removable connection to a coupling (71) on the engine to receive rotational force. A separate support bearing (79) is secured to the utilitarian device body (40) and removably engages the engine coupling (71). That engagement transfers the weight of the utilitarian device (16) through the support bearing (79) to the internal combustion engine. Thus, the weight of the utilitarian device (16) is not transferred directly from its body (40) to the housing (20) of the engine.

Dependent claim 17 recites that the drive member (78) of the utilitarian device (16) is a shaft that is received within an aperture (72) in the engine coupling (71).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Does U.S. Patent Application Publication No. 2002/0235505 of Brunelli render claims 1-19 unpatentable under 35 U.S.C. §103?

VII. ARGUMENT

Claims 1-19 Are Patentable Under 35 U.S.C. §103

1. Claims 1-8

Independent claim 1 specifies a support bearing through which the weight of a utilitarian device is transferred to the crankshaft of an internal combustion engine. That support bearing is separate from a drive connector through which components of the utilitarian device are rotated by the engine crankshaft.

The claimed structure is patentably distinct from the teaching of Brunelli's prior patent application for two reasons:

- A. The Brunelli device does not transfer weight of a utilitarian device to the crankshaft of a internal combustion engine; and
- B. The Brunelli device does not have a support bearing that is fixedly connected to either the body of the utilitarian device or the vertical crankshaft of the engine.

A. Figures 1 and 2 of Brunelli illustrate a piece of power equipment in which an internal combustion engine 25 is mounted on top of a housing 75 of an air compressor 20. The weight of the engine and the air compressor is carried directly by that housing 75 which is attached to and supported by a cart 15.

However, paragraph 0025 of the reference make a passing statement that the engine could be positioned below the air compressor with the drive shaft of the engine extending vertically upwards to engage the compressor. This extremely brief mention of an alternative embodiment, which is not strengthened by a drawing, does not provide any suggestion that the weight of the air compressor could be supported directly by the engine, much less by a

connection to the engine crankshaft. The obvious arrangement is that the air compressor 20 still would have its housing 75 attached directly to the cart 15 to support the compressor's weight. Therefore, the clear teaching of the cited patent application is that, regardless of how the components are oriented, the weight of the utilitarian device is supported directly by the cart 15 and not through the engine.

Nevertheless the Office Action proposes that this vague description of an alternative embodiment would motivate a skilled artisan to support the weight of the utilitarian device by the engine for "ease of coupling the compressor to the engine." That motivation does not exist. In fact it is contrary to conventional engineering wisdom in which such weight transfer through rotating components is to be avoided as adversely affecting bearings and other engine components. Therefore, absent the express teaching in the present application regarding the special support bearing, one of ordinary skill in the art would not be led to alter the design of the Brunelli apparatus so that the housing 75 no longer supports the weight of both the engine and the compressor on the cart 15.

B. The reference does not have a support bearing that is fixedly connected to either the body of the utilitarian device or the vertical crankshaft of the engine.

First the alleged support bearing 155 in Brunelli is not fixedly connected to the body of the utilitarian device. That bearing 155 is connected to the moveable piston rod 150 of the utilitarian device which in turn is pivotally connected to the piston that slides in the compressor cylinder. Thus the connection between the alleged support bearing 155 and the utilitarian device body is anything but fixed.

Nor is the Brunelli support bearing 155 fixedly connected to the engine's vertical crankshaft. The final rejection contends that coupling 115 in Brunelli's first embodiment (Figure 2) is the claimed drive connector on the utilitarian device, and then contends that bearing 155 in the second embodiment (Figures 3 and 4) qualifies as the claimed support bearing. Although the rejection selected components from two dramatically different embodiments, its reasoning dictates that coupling 130 in the second embodiment corresponds to the claimed drive connector. Thus the alleged support bearing 155 is attached to the engine crankshaft 120 by coupling 130, as shown in Figure 3. However, because that coupling 130 must be removably coupled to the engine crankshaft, as required to be the claimed drive connector, the alleged support bearing 155 is not fixedly connected to the crankshaft, but is removably coupled thereto.

Therefore, Brunelli's piston rod bearing 155 does not meet the physical connection specified for the support bearing in claim 1.

In summary, the Brunelli patent application does not suggest transferring weight of a utilitarian device to the engine crankshaft, nor doing so via a support bearing that is fixedly connected to either the body of the utilitarian device or the engine crankshaft. Therefore, claim 1 and its dependent claims 2-8 are patentable under 35 U.S.C. §103.

2. Claim 4

Furthermore, the detailed elements recited in claims depending from claim 1 also are not suggested by Brunelli. Specifically, claim 4 adds a separate engine coupling attached to the crankshaft and engaging the support bearing. The engine coupling has an aperture into which the drive connector of the utilitarian device is received. The rejection

has failed to identify any component of the Brunelli apparatus which either corresponds to this engine coupling or which would be obvious to so modify. In fact there is none, because Brunelli's crankshaft 120 is attached directly to what the rejection considers as the drive connector of the utilitarian device. None of the components in the reference is attached to the crankshaft, engages the support bearing and has an aperture into which the drive connector is received.

3. Claim 4

Claim 5 states that the engine coupling is mounted on a flywheel attached to the engine crankshaft. Brunelli does not even mention or show a flywheel much less this connection of elements.

4. Claim 6

The rejection has not identified anything in the cited patent application which suggests engine coupling in claim 6 that is attached to the crankshaft and has an aperture which receives a shaft of the utilitarian device's drive connector. In fact, Brunelli neither discloses nor suggests that configuration of elements.

5. Claims 9-14

Independent claim 9 states that the powered apparatus has an internal combustion engine with a vertical crankshaft connected to an engine coupling that has an aperture. The utilitarian device has a drive shaft that is removably received within the aperture of the engine coupling. None of the components of the powered apparatus in the Brunelli patent application correspond to the engine coupling and the drive shaft of the utilitarian device. This is highlighted by the fact that the rejection has not identified such components.

In addition to this engagement of the engine coupling with the drive shaft of the utilitarian device in claim 9, there is a separate support bearing which is independent of that engagement. None of the embodiments of Brunelli has this separate support bearing. Note that in Figure 5 of the present application, the shaft 78 of the utilitarian device 16 is received within an aperture 72 the engine coupling 71. That engine coupling between the engine and the internal combustion engine is separate from the support bearing 79 through which the weight of the utilitarian device is transferred to the internal combustion engine. This separate support bearing, which is not part of the drive connection between the engine and the utilitarian device, is not suggested by Brunelli.

6. Claim 10

Brunelli also fails to disclose the flywheel in claim 10 that connects an engine coupling to a vertical crankshaft of the engine. In that reference, a vertical crankshaft 120 is connected directly to the utilitarian device without any intervening flywheel.

7. Claim 12

The rejection also fails to demonstrate how the cited patent application suggests the support bearing in claim 12 being secured to the body of the utilitarian device and removably engaging the engine coupling. None of the corresponding components in Brunelli identified by the Office Action is secured to the body 75 of the air compressor.

8. Claims 15-19

Independent claim 15 recites a utilitarian device which has a drive member for removable connection to an engine coupling attached to the engine crankshaft. A separate support bearing is secured to the body of the utilitarian device to removably engage the

engine coupling. The rejection identified a conventional piston rod bearing 155 of Brunelli as corresponding to the support bearing in the pending claims. However, that bearing 155 is located between a shaft of the offset drive 125 and the piston rod 150 within the utilitarian device. Nowhere is that support bearing secured to that body 75 of the utilitarian device.

9. Claim 17

In addition, the rejection has not identified how the Brunelli patent application suggests the drive member that comprises a shaft received in an aperture of the engine coupling as stated in claim 17.

VIII. CONCLUSION

For the above reasons, the final rejection has failed to demonstrate how the Brunelli reference renders the pending claims unpatentable under 35 U.S.C. §103. Therefore, Appellant requests reversal of the final rejection in the instant patent application.

Respectfully submitted,
Jonathan R. Chittenden

Dated: October 27, 2005

By: 
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APPENDIX A
Claims of Patent Application No. 10/774,237

1. A powered apparatus comprising:
an internal combustion engine with a housing and a vertical crankshaft;
a utilitarian device having a body and a drive connector removably coupled to
the crankshaft for receiving rotational force from the internal combustion engine; and
a support bearing fixedly connected to one of the body and the vertical
crankshaft, and releasably engaging the other of the body and the vertical crankshaft,
wherein weight of the utilitarian device is transferred through the support bearing to
the internal combustion engine.
2. The powered apparatus as recited in claim 1 wherein the utilitarian device
comprises an apparatus connected to the drive connector, wherein the apparatus is
selected from the group consisting of an air blower, an air compressor, a pump, a
chipper-shredder, a power washer, a vacuum, a chemical sprayer, and an electrical
generator.
3. The powered apparatus as recited in claim 1 wherein substantially all the
weight of the utilitarian device is transferred through the support bearing to the internal
combustion engine.

4. The powered apparatus as recited in claim 1 further comprising an engine coupling attached to the crankshaft and engaging the support bearing, the engine coupling having an aperture into which the drive connector is received.

5. The powered apparatus as recited in claim 1 further comprising flywheel attached to the crankshaft and having an engine coupling mounted thereon and removably engaged by the support bearing and by the drive connector.

6. The powered apparatus as recited in claim 1 wherein:
the internal combustion engine further comprises an engine coupling attached to the crankshaft and having an aperture; and
the drive connector of the utilitarian device comprises a shaft which is received in the aperture.

7. The powered apparatus as recited in claim 6 wherein the aperture of the engine coupling has a non-circular cross section; and the shaft of the drive connector has a cross section which mates with the non-circular cross section of the engine coupling.

8. The powered apparatus as recited in claim 6 wherein the shaft of the drive connector has splines; and the aperture of the engine coupling has grooves within which the splines are received.

9. A powered apparatus comprising:

an internal combustion engine having a vertical crankshaft, and an engine coupling connected to the vertical crankshaft and having an aperture;

a utilitarian device having a body and a drive shaft removably received in the aperture of the engine coupling; and

a support bearing secured to one of the body and the engine coupling, and removably engaging the other of the body and the engine coupling, wherein weight of the utilitarian device is transferred through the support bearing to the internal combustion engine.

10. The powered apparatus as recited in claim 9 further comprising a flywheel connecting the engine coupling to the vertical crankshaft.

11. The powered apparatus as recited in claim 9 wherein substantially all the weight of the utilitarian device is transferred through the support bearing to the internal combustion engine.

12. The powered apparatus as recited in claim 9 wherein the support bearing is secured to the body of the utilitarian device and removably engages the engine coupling.

13. The powered apparatus as recited in claim 9 wherein the aperture of the engine coupling has a non-circular cross section; and the drive shaft has a cross section which mates with the non-circular cross section of that aperture.

14. The powered apparatus as recited in claim 13 wherein the drive shaft has splines; and the aperture of the engine coupling has grooves within which the splines are received.

15. A utilitarian device for connection to an internal combustion engine which has a housing, a crankshaft, and an engine coupling connected to the crankshaft, the utilitarian device comprising:

a body;

a drive member for removable connection to the engine coupling to receive rotational force from the internal combustion engine; and

a support bearing secured to the body to removably engage the engine coupling, wherein weight of the utilitarian device is transferred through the support bearing to the internal combustion engine.

16. The utilitarian device as recited in claim 15 wherein the utilitarian device comprises an apparatus connected to the drive member, wherein the apparatus is selected from the group consisting of an air blower, an air compressor, a pump, a chipper-shredder, a power washer, a vacuum, a chemical sprayer, and an electrical generator.

17. The utilitarian device as recited in claim 15 wherein the drive member comprises a shaft which is received in an aperture in the engine coupling.

18. The utilitarian device as recited in claim 17 wherein the aperture of the engine coupling has a non-circular cross section; and the shaft of the drive member has a cross section which mates with the non-circular cross section of that aperture.

19. The utilitarian device as recited in claim 17 wherein the shaft of the drive member has splines; and the aperture of the engine coupling has grooves within which the splines are received.

APPENDIX B
EVIDENCE

There is no evidence, other than the documents cited in the final Office Action.

APPENDIX C

RELATED PROCEEDINGS

There are no decisions in related proceedings.